

CLAIMS

What is claimed is new and desired to be protected by Letters Patent is set forth in the appended claims:

1. A wastewater treatment system comprising:
 - a) means of decontaminating wastewater;
 - b) means of measuring control parameters of the wastewater;
 - c) means for controlling said decontamination means; and
 - d) a programmable logic controller wherein a user receives control parameter data and controls said wastewater treatment system from a remote location.

2. The wastewater treatment system of claim 1, wherein said decontamination means comprise:
 - a) a coagulation stage;
 - b) an energized magnetic media filtration stage;
 - c) an accelerated electro-chemical oxidation stage; and
 - d) a sludge and media handling stage.

3. The wastewater treatment system of claim 2, wherein said coagulation stage

comprises a primary reservoir.

4. The wastewater treatment system of claim 3, wherein said primary reservoir includes ion probes for measuring control parameters of wastewater.

5. The wastewater treatment system of claim 4, wherein said control parameters include at least one of pH, DO, and TDS.

6. The wastewater treatment system of claim 2, wherein said coagulation stage comprises a primary reactor.

7. The wastewater treatment system of claim 6, wherein said primary reactor includes a grinder, loosening means, and an energized media bed.

8. The wastewater treatment system of claim 7, further comprising perforated titanium plates.

9. The wastewater treatment system of claim 7, further comprising bi-polar electrodes connected to either end of said primary reactor.

10. The wastewater treatment system of claim 9, wherein said bi-polar electrodes comprise:

a fixed anode;

a fixed cathode; and

a power supply wherein said power supply is attached to said anode and said cathode for producing an electrical current through said primary reactor.

11. The wastewater treatment system of claim 7, wherein said loosening means comprise at least one of vibrational, rotational, pneumatic, hydraulic, or electromagnetic.

12. The wastewater treatment system of claim 11, wherein said rotational loosening means comprises mixer rods.

13. The wastewater treatment system of claim 2, wherein said energized magnetic media filtration stage comprises:

a) an intermediate reservoir for removing coagulated solid waste;

b) an energized magnetic media filtration (EMF) filter for separating media from solid waste; and

c) an EMF reservoir for separating media from the wastewater.

14. The wastewater treatment system of claim 13, wherein said EMF filter comprises a weir overflow apparatus for separating clean media from contaminated media.

15. The wastewater treatment system of claim 2, wherein said sludge and media handling stage comprises:

- a) a dryer/separator for separating low density fines from contaminated media;
- b) a cyclone for converting low density fines to filtrate fines; and
- c) a magnetic separator for separating clean media from high density sludge.